

NOTES ON SOME MYRMECOPHILOUS COLEOPTERA.

BY HENRY FREDERICK WICKHAM, IOWA CITY, IOWA.

In a recent paper published in the Proceedings of the Entomological society of Washington (vol. 1, 1890, pp. 237-247) Mr. E. A. Schwarz has listed all the North American beetles that are known to be myrmecophilous and has added notes on some that he considers doubtfully such. Two articles by Dr. Hamilton in the Canadian entomologist (vols. 20 and 21) and one by Prof. J. B. Smith in the American naturalist (August, 1886) also treat of these insects; to them I wish to add the following data which seem to be new. I am greatly indebted to Dr. Horn for determinations of many species and for suggestions regarding the new *Hetaerius* herein described; and to Prof. C. V. Riley for the names of the ants, specimens of which he had compared with those in the national collection. I have placed in that collection specimens of all the ants noted, the beetles being in my own unless otherwise stated.

Ptomaphagus pusio occurs at Iowa City during April, deep in the galleries of a large black ant. This species is not on any of the previous lists.

Fastiger fuchsii has long been known as a myrmecophile but hitherto the host has not been recorded; I took it at Williams, Arizona, in the nests of a variety of *Cremastogaster lincolata*. All of our best coleopterists to whom I have sent examples of the Arizona species unite in declaring it to be the

same as the types from Tennessee.

Ctenistes pulvereus was listed by Mr. Schwarz on the authority of Dr. Leconte. By the capture of several specimens at Tucson, Ariz., I am able to verify the Doctor's observation and to record the hitherto unknown host as *Formica schaufussi*.

Lomechusa cava. This species is mentioned to call attention to the wide distribution of the genus; specimens differing little from *cava* except in size have been taken by me, with ants, in the Cascade Mts. of Washington and in the Rockies of Colorado; the species is also found in the Mississippi Valley and thence east to the Atlantic.

Gyrophaena sp. A number of specimens of this species—a true myrmecophile—were taken at Cañon City, Colorado, in the nests of *Solenopsis debilis* which they resemble so closely in color and size as to render detection somewhat difficult when the colony is disturbed and the ants in motion; the ants show no hostility towards it. From Prof. Riley I learn that this is the same species recorded by Mr. Schwarz (loc. cit. p. 224) as *Myrmecochara?* n. sp., collected by Morrison at Lake Tahoe.

Philonthus microphthalmus occurred at Iowa City in the nest of *Aphaenogaster fulva*, probably however merely as an accidental visitor; in the same nest I took a species of *Scopaeus* not yet determined.

Limulodes paradoxus is found here with the same ant as the preceding species though Mr. Schwarz takes it with *Lasius aphidicola*. I once took a specimen at Walnut, Ariz., with another ant and it will probably be found to infest the nests of several species.

Trichopteryx parallelopipeda. A specimen doubtfully referred to this species occurred with ants (*Tapinoma*) at Cañon City, Colo. This is contrary to the usual habit in this genus and is probably accidental.

A species of *Hetaerius* taken by me in Wyoming proves to be new, and as it is very distinct and the species of the genus are few, I describe it below to preserve the record:

Hetaerius hornii n. sp. Form robust, broadly sub-oval, color rufo-castaneous; surface shining sparsely covered with yellow scale-like hairs, longer on the sides and near base of the pronotum. Head with rather large tolerably dense punctures, front concave. Thorax broader than long, wider at base than at apex; divided on each side by a deep groove which is double at the base, into lateral and discal portions: discal portion shining, with a few punctures and clothed with yellow recumbent hairs, sparse at the middle but more numerous on the sides and especially at base where they are also much longer; lateral portion divided again by a deep groove about 1-3 from base of thorax into anterior and posterior divisions, the latter being sub-quadrate, convex, somewhat shining, finely punctured and covered with long yellow hair; the anterior division is irregularly oblong, wider in front, flattened, and, where the absence of hairs permits the surface to be seen, somewhat scabrous; it is clothed with yellow hairs which become longer behind. Elytra with the striae deep at base, each having the

outer margin raised, subhumeral stria reaching about two-thirds to tip, first and third dorsals entire, the tips converging, second a little shorter. The raised edge of each stria bears yellow recumbent hairs, longer on the first and third dorsals; between the inner dorsal and the suture are two rows of hairs following the course of lines of indistinct punctures. Propygidium with but few punctures visible under low power, but with higher power it is seen to be densely and finely rugose; pygidium much the same but with still finer punctures, mostly towards the sides; margins of propygidium and pygidium dark. Prosternum punctured, margined at sides, truncate at base, lobe with a moderate constriction anteriorly, extremity somewhat rounded; prosternal ridges extending two thirds towards apex, nearly parallel, merely slightly sinuate opposite the coxae. Mesosternum punctured, with distinct marginal line. Metasternum and abdomen smooth, shining. Length 2.5 mm.

Differs from *H. tristriatus*, to which it is nearest allied, in the sculpture of the thorax and in vestiture; the form of the lobe at the posterior angles of the thorax is globular in that species.

Taken by me at Cheyenne, Wyoming in the nests of *Formica schaufussi* Mayr, in May 1889. Type in cabinet of Dr. Horn to whom it gives me pleasure to dedicate it in recognition of many favors rendered.

Rhyssemus sonatus occurred with *Solenopsis debilis* at Cañon City, Colo., but this may be merely accidental as is often the case with *Aphodius granarius* which I find in the ant's nest here.

When the habits of our western species of Tenebrionidae are better known, I think it will be found that they fur-

nish their full quota of myrmecophiles. The capture of numbers of *Araeoschizus armatus* in an anthill at Green River, Wyo. has already been recorded by me (Ent. amer., v. 6, p. 84) and quoted by Mr. Schwarz in his paper cited. Though Dr. Horn holds that *Araeoschizus* is neither parasitic nor inquiline, the fact remains that they are much more abundant in and around ant's nests. I noticed this especially at Tuscon in the case of three species (*A. regularis*, *fimbriatus* and *simplex*) which I found there in considerable numbers.

Notibius puberulus is often found in ant's nests or in the immediate vicinity.

At Fort Yuma I have noticed them running across ant hills or around the entrances to the underground galleries without the interference of the ants; near Los Angeles while at work with Mr. Coquillet we dug up a large nest and found in it, besides some specimens of *Notibius puncticollis*, a number of *Conibius elongatus* and *Eurymetopon convexicolle*. I think it quite possible, considering that nothing is known of the early stages of these beetles, that they may breed in the nests, though it is also likely that they may use them simply for shelter just as *Elcodes dispersa* uses the holes of prairie dogs.

ADDITIONAL NOTES ON BOMBYCID LARVAE.

BY HARRISON G. DYAR, BOSTON, MASS.

HALSIDOTA ALNI Hy. Edw.

1876—Hy. Edw., Proc. Cal. acad. sci., vii, 129 (as a variety of *H. agassizii*).

1882—Grote, New check list, p. 16.

1891—Smith, List. lep., no. 1129 a.

Mature larva.—Head rounded, smooth, black and very shiny; bases of antennae, labium and a line below clypeus yellow; width 3.5 mm. Body black, mottled with yellowish, which predominates ventrally; abdominal feet dull yellow, the claspers brownish; thoracic feet black; spiracles white. The warts are arranged as in *H. maculata** and bear dense, spreading tufts of feathery hairs of even length, but slightly longer dorsally on joints 5 and 12, and keeled along dorsal line. On joints 2-6 and 10-13 the hair is deep black, on joints 7-9 orange ochraceous†. In the black parts at

both ends are several long, thin, white pencils, consisting of from one to several hairs and arranged as follows:—on joints 3 and 4 from warts 2-5; on joint 5 from warts 1-5; on joint 6, a single hair from warts 3 and 4; on joint 10 a single hair from warts 2-4; on joint 11 from warts 2, 3, and 5; on joint 12 from warts 1 and 2 and on joint 13 from the large wart and the lateral one.

Food plants.—Willow (*Salix*) and alder (*Alnus*).

Habitat.—The Sierra Nevada range of California and probably further north. Mr. Edwards's example came from Shasta Co., mine from Mariposa Co.

HALSIDOTA AGASSIZII Pack.

1864—Packard, Proc. ent. soc. Phil., v. 3, 128.

1873—Stretch, Zyg Bomb. N. A. v. 1, 103

1889.—Hy. Edw., Bull. no. 35, U. S. nat. mus., 62. *pr. var. of maculata*.

1891—Smith, New list, p. 27. *maculata*.

* See Psyche, vol. 6, p. 165.

† Ridgway's Nomenclature of colors, pl. v, fig. 3.